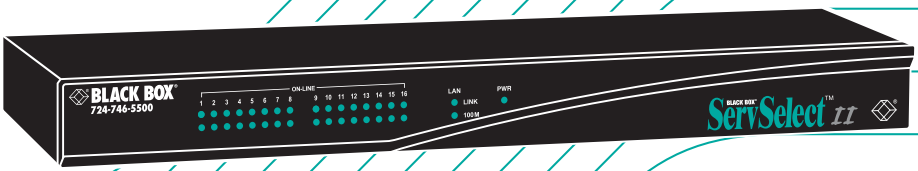
APRIL 2003

BLACK BOX® ServSelect™ II



KV2016A
KV2016E

BLACK BOX®
NETWORK SERVICES

Welcome to the ServSwitch™ Family!

Thank you for purchasing a BLACK BOX® ServSelect II! We appreciate your business, and we think you ll appreciate the many ways that your new ServSelect II will save you money, time, and effort.

That s because our ServSwitch family is all about breaking away from the traditional, expensive model of computer management. You know, the one-size-fits-all-even-if-it-doesn t model that says, “One computer gets one user station, no more, no less.” Why not a single user station (monitor, keyboard, and mouse) for multiple computers—even computers of different platforms? Why not a pair of user stations, each of which can control multiple computers? Why not multiple user stations for the same computer?

With our ServSwitch products, there s no reason why not. We carry a broad line of robust solutions for all these applications. Do you have just two PCs, and need an economical alternative to keeping two monitors, keyboards, and mice on your desk? Or do you need to share dozens of computers, including a mix of IBM® PC, RS/6000®, Apple® Macintosh®, Sun Microsystems®, and SGI™ compatibles among multiple users with different access levels? Does your switch have to sit solidly on a work table and use regular everyday cables? Or does it have to be mounted in an equipment rack and use convenient many-to-one cables? No matter how large or small your setup is, no matter how simple or how complex, we re confident we have a ServSwitch system that s just right for you.

The ServSwitch™ family from BLACK BOX—the one-stop answer for all your KVM switching needs!

*

This manual will tell you all about your new ServSelect II, including how to install, operate, and troubleshoot it. For an introduction to the ServSelect II, see Chapter 2.

The ServSelect II product codes covered in this manual are:

KV2016A KV2016E

This manual also includes information about the ServSelect II Software and the Server Access Modules, which have their own manuals or installation guides:

KV125A KV126A KV127A

FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA

RADIO-FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio-frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer s instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user s authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

EUROPEAN UNION DECLARATION OF CONFORMITY

This equipment has been tested and found to comply with the limits for a class A computing device in accordance with the specifications in the European standard EN55022. These limits are designed to provide reasonable protection against harmful interference. This equipment generates, uses and can radiate radio-frequency energy, and if not installed and used in accordance with the instructions, might cause harmful interference to radio or television reception.

However, there is no guarantee that harmful interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, you can correct the interference with one or more of the following measures:

(a) Reorient or relocate the receiving antenna.

(b) Increase the separation between the equipment and the receiver.

(c) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

(d) Consult the supplier or an experienced radio/TV technician for help.

Shielded cables must be used with this equipment to maintain compliance with radio frequency energy emission regulations and ensure a suitably high level of immunity to electromagnetic disturbances. This equipment has also been found to comply with European standards EN50082 and EN60950.

CE

Japanese Compliance Statement

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Other Agency Approvals

UL 1950, CSA C22. 2 No. 950, IEC 950
Republic of Korea EMI Standard Certificate Number: E-F900-01-2012 (A)

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Normas Oficiales Mexicanas (NOM)

Electrical Safety Statement

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquear la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico debe ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico debe ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo período de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 A: El cable de poder o el contacto ha sido dañado; u
 B: Objectos han caído o líquido ha sido derramado dentro del aparato; o
 C: El aparato ha sido expuesto a la lluvia; o
 D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 E: El aparato ha sido tirado o su cubierta ha sido dañada.

Contents

1. Specifications 7

2. Introduction 8

2.1 Features and Benefits 8

2.2 Safety Precautions 10

3. Installation 12

3.1 Getting Started 12

3.2 Rack Mounting Your ServSelect II 12

3.3 Installing the ServSelect II 14

3.4 Setting Up Your ServSelect II System 15

4. Basic Operations 16

4.1 Controlling Your System at the Analog Ports 16

4.2 Viewing and Selecting Ports and Servers 16

4.3 Navigating the OSD 19

4.4 Configuring the OSD 20

4.5 Displaying Version Information 28

4.6 Scanning Your System 30

4.7 Broadcasting to Servers 32

4.7 Changing Your Switch Mode 33

5. Troubleshooting 35

5.1 Calling BLACK BOX 35

5.2 Shipping and Packaging 35

6. FLASH Upgrades 36

6.1 Upgrading the ServSelect II 36

6.2 Upgrading the SAM firmware 37

1. Specifications

During the course of this product s lifetime, modifications might be made to its hardware or firmware that could cause these specifications to change without notice.

Agency Approvals	
	EN55022 Class A, EN55024, EN61000-3-3, FCC15 Class A, VCCI Class A, IEC950, EN60950, UL 1950/60950 third edition, CSA C22.2 No. 950
Server Ports	
Number	16
Interface Types	PS/2, Sun and USB SAM modules
Connectors	RJ-45
Sync Types	Separate horizontal and vertical
Plug and Play	DDC2B
Video Resolution	Analog Port Maximum 1600 x 1280 @ 75 Hz
Configuration Port	
Number	1
Interface Type	Serial RS-232
Connector	DB9 Male
Analog Port	
Number	2
Interface Types	PS/2 and VGA
Connectors	PS/2 MiniDIN and 15 pin D
Other Characteristics	
Heat Dissipation	92 BTU/Hr
Airflow	8 cfm
Temperature	10º to 50º Celsius (50º to 122º Fahrenheit) operating -20º to 60º Celsius (-4º to 140º Fahrenheit) nonoperating
Humidity	20 to 80% noncondensing operating 5 to 95% noncondensing nonoperating
Power	100 to 240 VAC (autosensing), 50 to 60 Hz, 40 W maximum
AC-input current rating	0.5 A
AC-input cable	18 AWG three-wire cable, with a three-lead IEC-320 receptacle on the power supply end and a country or region dependent plug on the power resource end
Power Consumption	12.5 W
Size (HxWxD)	4.45 x 43.18 x 27.94 cm 1U form factor (1.75 x 17.00 x 11.00 in)
Weight	3.6 kg (8 lb) without cables

2. Introduction

2.1 Features and Benefits

The multiuser, 16-port ServSelect II integrates the Black Box field-proven analog keyboard, video and mouse (KVM) switching technology with advanced cable management, flexible access for two simultaneous users and a patented, next-generation user interface. The ServSelect II KVM switch conveniently supports all major server platforms and features powerful on-screen management for easy system configuration and server selection.

A unique benefit of the ServSelect II is the Server Access Module (SAM). The SAM with CAT 5 design dramatically reduces cable clutter, while providing optimal resolution and video settings. The built-in memory of the SAM simplifies configuration by assigning and retaining unique server names and Electronic ID (EID) numbers for each attached server. The SAM is powered directly from the server and provides Keep Alive™ functionality even if the ServSelect II is not powered.

NOTE:
Throughout the text, the word “appliance” is used generically to describe the ServSelect II switch.

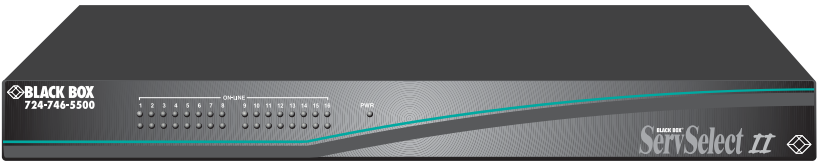


Figure 2-1. ServSelect II

Server Access Modules

The SAM allows direct KVM connectivity to servers in your ServSelect II system. Each ServSelect II has 16 Analog Rack Interface (ARI) ports for connecting the SAM. Utilizing an SAM, you can attach additional switches to expand your ServSelect II system. This flexibility allows you to add capacity as your data center grows.

Multiplatform support

The SAM available with the ServSelect II supports PS/2, Sun and USB server environments. For 13W3, Sun monitor connection, order KV127A and ACD002. Using the On-Screen Device (OSD) interface in conjunction with the SAM allows you to switch easily across platforms.

OSD graphical user interface

A ServSelect II switch uses the OSD, which features intuitive menus to configure your switch system and select computers. Computers can be identified by unique name, EID or port number, allowing you to assign unique server names.

Security

The OSD allows you to protect your system with a screen saver password. After a user-defined time, the screen saver mode engages and access is prohibited until the appropriate password is entered to reactivate the system.

Operation modes

The OSD user interface provides convenient operation modes for easy ServSelect II system administration. These modes (Broadcast, Scan, Switch and Share) allow you to manage your switching activities. Chapter 4 explains these modes in detail.

Video

ServSelect II provides optimal resolution for analog VGA, SVGA and XGA video. Achieve resolutions of up to 1600 x 1200 with a 10-foot cable and up to 800 x 600 with a 50-foot cable. Resolutions will vary depending upon the length of cable separating your switch and servers.

Plug and Play

The ServSelect II also supports Display Data Channel Plug and Play, which automates configuration of the monitor and is compliant with the VESA DDC2B standard.

FLASH upgradable

Upgrade your firmware at any time through a simple update utility to ensure that your ServSelect II system is always running the most current version available. Both the ServSelect II switch and the SAM are FLASH upgradable. See Chapter 6 for more information.

Cascading expansion

Each ServSelect II switch supports up to 16 directly attached servers and can conveniently scale to support more. You can expand your system using cascadable BLACK BOX products such as other ServSelect appliances. This extra “cascade” of units allows you to attach up to 256 servers in one system.

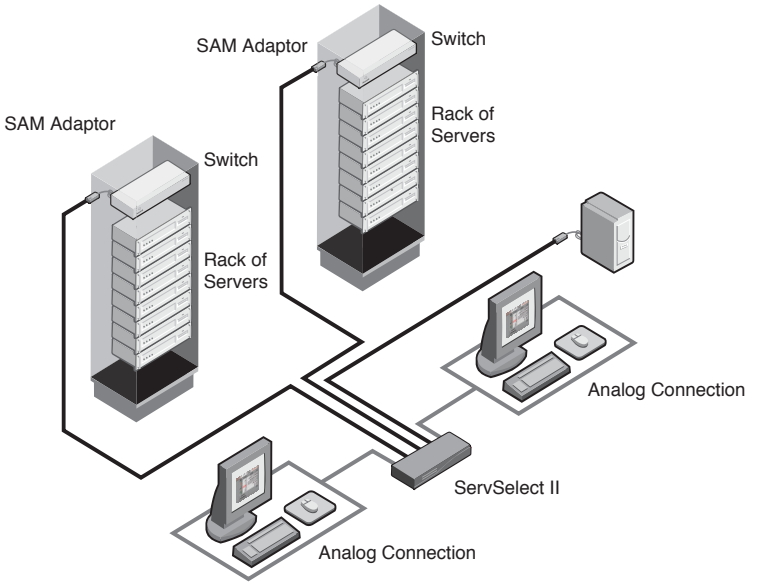


Figure 2-2. Example ServSelect II Configuration

2.2 Safety Precautions

To avoid potential video and/or keyboard problems when using these products:

- If the building has 3-phase AC power, ensure that the computer and monitor are on the same phase. For best results, they should be on the same circuit.
- Use only BLACK BOX-supplied cable to connect computers and KVM switches.

To avoid potentially fatal shock hazard and possible damage to equipment, please observe the following precautions:

- Do not use a 2-wire extension cord in any BLACK BOX product configuration.
- Test AC outlets at the computer and monitor for proper polarity and grounding.
- Use only with grounded outlets at both the computer and monitor. When using a backup power supply (UPS), power the computer, the monitor and the appliance off the supply.

NOTE:
The AC inlet is the main disconnect.

Rack mount safety considerations

- Elevated Ambient Temperature: If the equipment is installed in a closed rack assembly, the operation temperature of the rack environment may be greater than room ambient. Use care not to exceed the rated maximum ambient temperature of the equipment.
- Reduced Air Flow: Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.
- Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Consider equipment name-plate ratings for maximum current.
- Reliable Earthing: Reliable earthing of rackmounted equipment should be maintained. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).

3. Installation

3.1 Getting Started

Before installing your ServSelect II appliance, refer to the following list to ensure you have all items that shipped with the appliance as well as other items necessary for proper installation.

Supplied with the ServSelect II

- ServSelect II unit
- Power cord
- One null modem serial cable
- ServSelect II Installer/User Guide
- ServSelect II Quick Installation Guide
- Rack mounting kit

Additional items needed

One SAM adaptor and UTP cabling per attached server or switch

3.2 Rack Mounting Your ServSelect II

NOTE:
Rack mounting kits are sold separately.

Your ServSelect II appliance may be rack mounted using the included brackets. Before installing the appliance and other components in the rack cabinet (if not already installed), stabilize the rack in a permanent location. Install your equipment starting at the bottom of the rack cabinet, then work to the top. Avoid uneven loading or overloading of rack cabinets.

CAUTION:
Rack Loading - Overloading or uneven loading of racks may result in shelf or rack failure, causing damage to equipment and possible personal injury. Stabilize racks in a permanent location before loading begins. Mount components beginning at the bottom of the rack, then work to the top. Do not exceed your rack load rating.



Figure 3-1. ServSelect II Horizontal Installation

To install the 1U switch mounting bracket:

1. Remove the first two screws on each side.
2. Line up the holes in the “long side” of the kit s side brackets with the screw holes in the switch.
3. With a Phillips screwdriver, fasten the mounting brackets to the switch using two screws on each side.
4. Attach four cage nuts or clip nuts to the rack mounting flange of the rack cabinet so that the nut is positioned on the inside of the rack.

NOTE:
Nuts are not included with the rack mount kit.

5. Mount the switch assembly to the rack cabinet by matching the holes in the “short side” of each bracket to an appropriate set of matching holes on your rack cabinet. Next, insert the combination hex head screws through the slots in the bracket and the holes in the mounting rail, then into the cage nuts or clip nuts.

3.3 Installing the ServSelect II

Plug the supplied power cord into the back of the appliance and then into an appropriate power source. Figure 3-2 illustrates one possible configuration for your ServSelect appliance. See the following detailed set of procedures to successfully install your appliance.

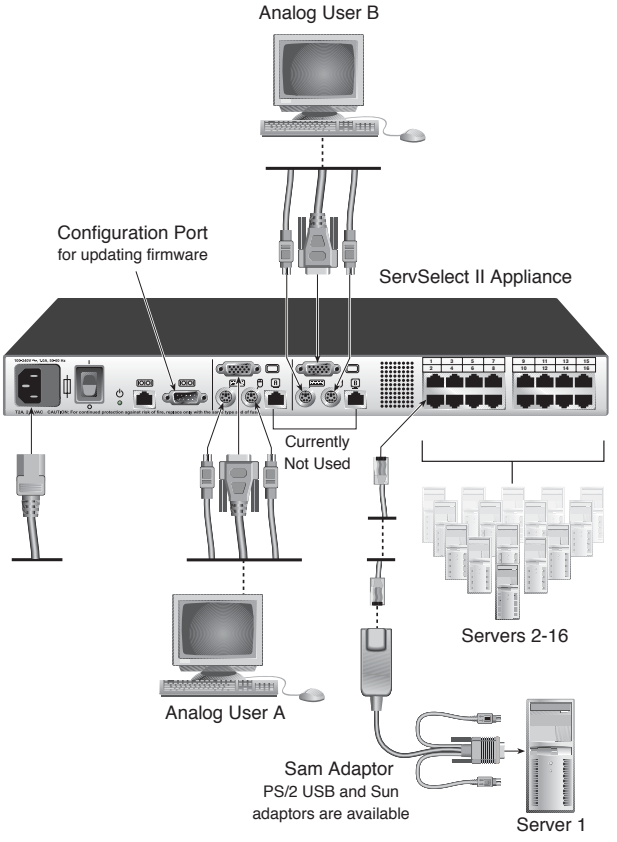


Figure 3-2. Basic ServSelect II Configuration

CAUTION:
To reduce the risk of electric shock or damage to your equipment-
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) outlet that is easily accessible at all times.
- Disconnect the power from the unit by unplugging the power cord from either the electrical outlet or the unit.

To connect an SAM to each server:

1. Locate the SAM for your ServSelect II unit.
2. Attach the appropriately color-coded cable ends to the keyboard, monitor and mouse ports on the first server you will be connecting to the unit.
3. Attach one end of the CAT 5 cabling that will run between your SAM and ServSelect II unit to the RJ45 connector on the SAM.
4. Connect the other end of the CAT 5 cable to the desired ARI port on the back of your ServSelect II unit.
5. Repeat steps 2-4 for all servers you wish to attach.

NOTE:
When connecting a Sun SAM, you must use a multi-sync monitor to accommodate Sun computers that support both VGA and sync-on-green or composite sync.

To connect local peripherals:

1. Select the keyboard, monitor and mouse to be connected to local analog user A.
2. Locate the port set labeled *A* on the back of the appliance. Connect these peripherals to their respective ports.
3. Repeat these steps for the local analog port set labeled *B*.
4. Bundle and label the cables for easy identification.

3.4 Setting Up Your ServSelect II System

With the ServSelect II system, you can auto detect and configure each port on your appliance. Chapter 4 provides detailed instructions on naming, customization and OSD setup and configuration.

4. Basic Operations

4.1 Controlling Your System at the Analog Ports

The ServSelect II features two analog port sets on the back of the unit that allow you to connect a monitor and a PS/2 keyboard and mouse for direct analog access. The appliance uses the OSD, which provides intuitive menus to configure your system and select computers.

4.2 Viewing and Selecting Ports and Servers

Use the OSD Main dialog box to view, configure and control servers in the ServSelect II system. View your servers by name, port or by the unique Electronic ID number (EID) embedded in each SAM. You will see an OSD-generated port list by default when you first launch the OSD. The Port column indicates the ARI port to which a server is connected.

To access the Main dialog box:

Press **Print Screen** to launch the OSD. The Main dialog box appears.

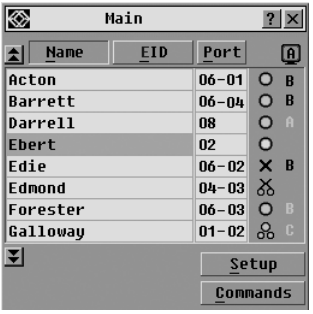


Figure 4-1. Example of Configured Main Dialog Box

NOTE:
You can also press the **Control** key twice within one second to launch the SAM. You can use this key sequence in any place you see **Print Screen** throughout this installer/user guide.

Viewing the status of your appliance

The status of the servers in your system is indicated in the right columns of the Main dialog box. The following table describes the status symbols.

OSD Status Symbols

Symbol	Description
	SAM is online (green circle).
	SAM is offline or is not operating properly.
	Connected switch is online.
	Connected switch is offline or is not operating properly.
	SAM is being upgraded (yellow circle).
	SAM is being accessed by the indicated user channel (green channel letter).
	SAM is blocked by the indicated user channel (black channel letter).

Selecting servers

Use the Main dialog box to select servers. When you select a server, the appliance reconfigures the keyboard and mouse to the proper settings for that server.

To select servers:

Double-click the server name, EID or port number.

-or-

If the display order of your server list is by port (*Port* button is depressed), type the port number and press **Enter**.

-or-

If the display order of your server list is by name or EID number (*Name* or *EID* button is depressed), type the first few characters of the name of the server or the EID number to establish it as unique and press **Enter**.

To select the previous server:

Press **Print Screen** and then **Backspace**. This key combination toggles you between the previous and current connections.

To disconnect the user from a server:

Press **Print Screen** and then **Alt+Ø**. This leaves the user in a free state, with no server selected. The status flag on your desktop displays *Free*.

Soft switching

Soft switching is the ability to switch servers using a hotkey sequence. You can soft switch to a server by pressing **Print Screen** and then typing the first few characters of its name or number. If you have set a Screen Delay Time and you press the key sequences before that time has elapsed, the OSD will not display.

To configure servers for soft switching:

1. Press **Print Screen** to launch the OSD. The Main dialog box appears.
2. Click *Setup - Menu*. The Menu dialog box appears.
3. For Screen Delay Time, type the number of seconds of delay desired before the Main dialog box is displayed after **Print Screen** is pressed.
4. Click *OK*.

To soft switch to a server:

1. To select a server, press **Print Screen**. If the display order of your server list is by port (*Port* button is depressed), type the port number and press **Enter**.
 -or-
 If the display order of your server list is by name or EID number (*Name* or *EID* button is depressed), type the first few characters of the name of the server or the EID number to establish it as unique and press **Enter**.
2. To switch back to the previous server, press **Print Screen** then **Backspace**.

4.3 Navigating the OSD

This table describes how to navigate the OSD using the keyboard and mouse.

OSD Navigation Basics

This Keystroke	Does This
Print Screen	Opens the OSD. Press **Print Screen** twice to send the **Print Screen** keystroke to the currently selected device.
F1	Opens the Help screen for the current dialog box.
Escape	Closes the current dialog box without saving changes and returns to the previous one. In the Main dialog box, it closes the OSD and returns to the flag. In a message box, it closes the pop-up box and returns to the current dialog box.
Alt	Opens dialog boxes, selects or checks options and executes actions when used with underlined or other designated letters.
Alt+X	Closes the current dialog box and returns to the previous one.
Alt+O	Selects the *OK* button, then returns to the previous dialog box**.**
Single-click, Enter	In a text box, it selects the text for editing and enables the **Left** and **Right Arrow** keys to move the cursor. Press **Enter** again to quit the edit mode**.**
Enter	Completes a switch in the Main dialog box and exits the OSD.
Print Screen, Backspace	Toggles back to previous selection.
Print Screen, Alt+Ø	Immediately disengages user from a server; no server is selected. Status flag displays *Free*. (This only applies to the Ø on the keyboard and not the keypad.)
Print Screen, Pause	Immediately turns on screen saver mode and prevents access to that particular console, if it is password protected.
Up/Down Arrows	Moves the cursor from line to line in lists.
Right/Left Arrows	Moves the cursor between columns. When editing a text box, these keys move the cursor within the column.
Page Up/Page Down	Pages up and down through Name and Port lists and Help pages.
Home/End	Moves the cursor to the top or bottom of a list.
Delete	Deletes current selection in the scan list or characters in a text box.
Shift-Del	Deletes from the current selection to the end of the list when editing a scan list.
Numbers	Type from the keyboard or keypad.

4.4 Configuring the OSD

You can configure your ServSelect II system from the Setup menu within the OSD. Select the *Names* button when initially setting up your appliance to identify servers by unique names. Select the other setup features to manage routine tasks for your servers from the OSD menu.

Setup Features to Manage Routine Tasks for Your Servers

Feature	Purpose
Menu	Change the server listing between numerically by port or EID number and alphabetically by name.
	Change the Screen Delay Time before the OSD displays after pressing **Print Screen**.
Flag	Change display, timing, color or location of the status flag.
Broadcast	Set up to simultaneously control multiple servers through keyboard and mouse actions.
Scan	Set up a custom scan pattern for up to 16 servers.
Security	Set passwords to restrict server access.
	Enable the screen saver.
Devices	Identify the number of ports on an attached cascade switch.
Names	Identify servers by unique names.
Switch	Choose the switch mode and the share mode time-out.

To access the Setup menu:

1. Press **Print Screen** to launch the OSD. The Main dialog box appears.
2. Click *Setup*. The Setup dialog box appears.



Figure 4-2. Setup Dialog Box

Assigning server names

Use the Names dialog box to identify individual servers by name rather than by port number. The Names list is always sorted by port order. Names are stored in the SAM, so even if you move the cable/server to another ARI port, the name and configuration will be recognized by the appliance.

NOTE:
If a server is turned off, its respective SAM will not appear in the Names list.

To access the Names dialog box:

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup - Names*. The Names dialog box appears.

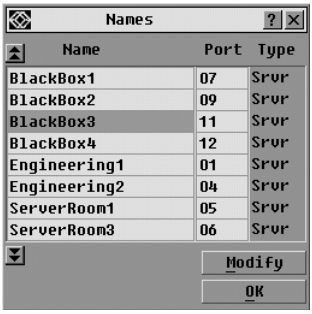


Figure 4-3. Names Dialog Box

NOTE:
If the server list changes, the mouse cursor will turn into an hourglass as the list is automatically updated. No mouse or keyboard input will be accepted until the list update is complete.

To assign names to servers:

1. In the Names dialog box, select a server name or port number and click *Modify*. The Name Modify dialog box appears.



Figure 4-4. Name Modify Dialog Box

2. Type a name in the New Name box. Names of servers may be up to 15 characters long. Legal characters include: A-Z, a-z, Ø-9, space and hyphen.
3. Click *OK* to transfer the new name to the Names dialog box. Your selection is not saved until you click *OK* in the Names dialog box.
4. Repeat steps 1-3 for each server in the system.
5. Click *OK* in the Names dialog box to save your changes.
 -or-
 Click *X* or press **Escape** to exit the dialog box without saving changes.

NOTE:
If an SAM has not been assigned a name, the EID is used as the default name.

Assigning device types

While the appliance automatically discovers cascade ServSelect switches attached to your unit, you will need to specify the number of ports on the cascade switch through the Devices dialog box. You will see an Sw-8 or Sw-24 appear in the Type category for the cascade switch. Select the switch from the list and the Modify button appears, allowing you to assign it the appropriate number of ports.

NOTE:
The Modify button will only be available if a configurable switch is selected.

To access the Devices dialog box:

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup - Devices*. The Devices dialog box appears.

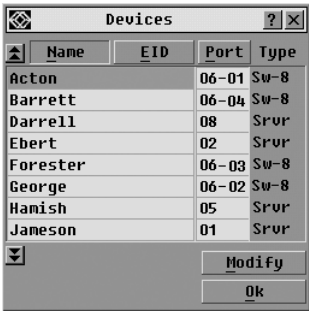


Figure 4-5. Devices Dialog Box

When the ServSelect II appliance discovers a cascade switch, you will notice the port numbering change to accommodate each server under that switch. For example, if the switch is connected to ARI port 6, the switch port would be listed as 06 and each server under it would be numbered sequentially 06-01, 06-02 and so on.

To assign a device type:

1. In the Devices dialog box, select the desired port number.
2. Click *Modify*. The Device Modify dialog box appears.

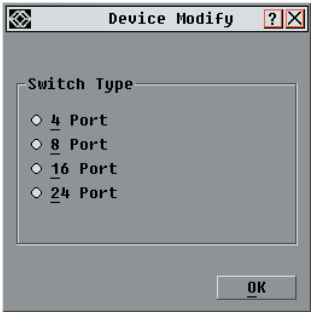


Figure 4-6. Device Modify Dialog Box

3. Choose the number of ports supported by your cascade switch and click *OK*.
4. Repeat steps 1–3 for each port requiring a device type to be assigned.
5. Click *OK* in the Devices dialog box to save settings.

NOTE:
Changes made in the Device Modify dialog box are not saved until you click **OK** in the Devices dialog box.

Changing the display behavior

Use the Menu dialog box to change the display order of servers and set a Screen Delay Time for the OSD. The display order setting alters how servers will display in several screens including the Main, Devices and Broadcast dialog boxes.

To access the Menu dialog box:

1. Press **Print Screen** to launch the OSD. The Main dialog box appears.
2. Click *Setup - Menu* in the Main dialog box. The Menu dialog box appears.

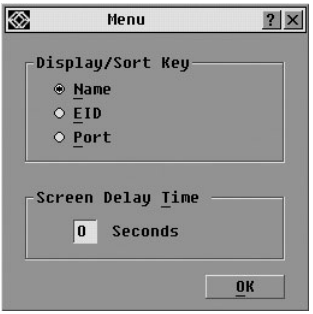


Figure 4.7. Menu Dialog Box

To choose the default display order of servers:

1. Select *Name* to display servers alphabetically by name.
 -or-
 Select *EID* to display servers numerically by EID number.
 -or-
 Select *Port* to display servers numerically by port number.
2. Click *OK*.

To set a Screen Delay Time for the OSD:

1. Type in the number of seconds (Ø-9) to delay the OSD display after you press **Print Screen**. Entering **Ø** will instantly launch the OSD with no delay.
2. Click *OK*.

Setting a Screen Delay Time allows you to complete a soft switch without the OSD displaying. To perform a soft switch, see *Soft switching* in this chapter.

Controlling the status flag

The status flag displays on your desktop and shows the name or EID number of the selected server or the status of the selected port. Use the Flag dialog box to configure the flag to display by server name or EID number, or to change the flag color, opacity, display time and location on the desktop.

OSD Status Flags

Flag	Description
Darrell	Flag type by name
520255-73F344	Flag type by EID number
Free	Flag indicating that the user was disconnected from all systems
Darrell	Flag indicating that Broadcast mode is enabled
Darrell	Flag indicating that the user is sharing but has no control
Darrell	Flag indicating that the user is sharing and has control

To access the Flag dialog box:

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup - Flag*. The Flag dialog box appears.

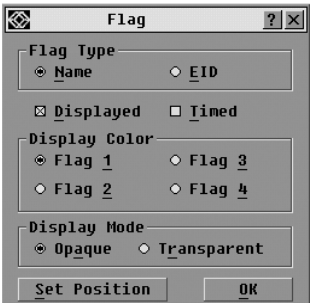


Figure 4-8. Flag Dialog Box

To determine how the status flag is displayed:

1. Select *Name* or *EID* to determine what information will be displayed.
2. Select *Displayed* to show the flag all the time or select *Timed* to display the flag for only five seconds after switching.
3. Select a flag color in Display Color.
4. In Display mode, select *Opaque* for a solid color flag or select *Transparent* to see the desktop through the flag.
5. To position the status flag on the desktop:
 a. Click *Set Position* to gain access to the Position Flag screen.
 b. Left-click on the title bar and drag to the desired location.
 c. Right-click to return to the Flag dialog box.



Figure 4-9. Set Position Flag

NOTE:
Changes made to the flag position are not saved until you click **OK** in the Flag dialog box.

6. Click *OK* to save settings.
 -or-
 Click *X* to exit without saving changes.

Setting console security

The OSD enables you to set security on your analog port console. You can establish a screen saver mode that engages after your console remains unused for a specified Inactivity Time. Once engaged, your console will remain locked until you press any key or move the mouse. You will then need to type in your password to continue.

Use the Security dialog box to lock your console with password protection, set or change your password and enable the screen saver.

NOTE:
If a password has been previously set, you will have to enter the password before you can access the Security dialog box.

To access the Security dialog box:

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup - Security*. The Security dialog box appears.



Figure 4-10. Security Dialog Box

To set or change the password:

1. Single-click and press **Enter** or double-click in the New text box.
2. Type the new password in the New text box and press **Enter**. Passwords must contain both alpha and numeric characters, are case sensitive and may be up to 12 characters long. Legal characters are: A-Z, a-z, Ø-9, space and hyphen.
3. In the Repeat box, type the password again and press **Enter**.
4. Click *OK* to change only your password, and then close the dialog box.

NOTE:
If you should lose or forget your password, you must return your switch for service or technical support. See Chapter 5 for contact information.

To password protect your console:

1. Set your password as described in the previous procedure.
2. Select *Enable Screen Saver.*
3. Type the number of minutes for Inactivity Time (from 1 to 99) to delay activation of password protection and the screen saver feature.
4. For Mode, select *Energy* if your monitor is ENERGY STAR® compliant; otherwise select *Screen*.

CAUTION:
Monitor damage can result from using Energy mode with monitors not compliant with ENERGY STAR®.

5. (Optional) Click *Test* to activate the screen saver test which lasts 10 seconds then returns you to the Security dialog box.
6. Click *OK*.

To log in to your console:

1. Press any key or move the mouse.
2. The Password dialog box appears. Type your password, then click *OK*.
3. The Main dialog box appears if the password was entered properly.

To remove password protection from your console:

1. From the Main dialog box, click *Setup* - *Security*; the Password dialog box appears. Type your password, then click *OK*.
2. In the Security dialog box, single-click and press **Enter** or double-click in the New box. Leave the box blank. Press **Enter**.
3. Single-click and press **Enter** or double-click in the Repeat box. Leave the box blank. Press **Enter**.
4. Click *OK* to eliminate your password.

To enable the screen saver mode with no password protection:

1. If your console does not require a password to gain access to the Security dialog box, proceed to step 2.
 -or-
 If your console is password protected, see the previous procedure, then go to step 2.

2. Select *Enable Screen Saver*.
3. Type the number of minutes for Inactivity Time (from 1–99) to delay activation of the screen saver.
4. Choose *Energy* if your monitor is ENERGY STAR® compliant; otherwise select *Screen*.

CAUTION:

Monitor damage can result from using Energy mode with monitors not compliant with ENERGY STAR®.

5. (Optional) Click *Test* to activate the screen saver test which lasts 10 seconds then returns you to the Security dialog box.
6. Click *OK*.

NOTE:

Activation of the screen saver mode disconnects the user from a server; no server is selected. The status flag displays *Free*.

To exit the screen saver mode:

Press any key or move your mouse. The Main dialog box appears and any previous server connection will be restored. If a digital user is on that connection, they will be disconnected and will receive a preemption message.

To turn off the screen saver:

1. In the Security dialog box, clear *Enable Screen Saver.*
2. Click *OK*.

To immediately turn on the screen saver:

Press **Print Screen**, then press **Pause**.

4.5 Displaying Version Information

The OSD enables you to display the ServSelect II and SAM firmware versions. For optimum performance, keep your firmware current. For more information, see Chapter 6.

To display version information:

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Commands - Display Versions*. The Version dialog box appears. The top half of the box lists the subsystem versions in the appliance.



Figure 4-11. Version Dialog Box

3. Click the SAM to view individual SAM version information. The SAM Selection dialog box appears.

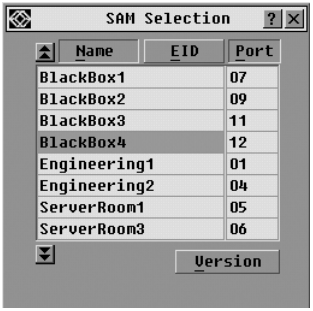


Figure 4-12. SAM Selection Dialog Box

4. Select an SAM to view and click the *Version* button. The SAM Version dialog box appears. For more information on loading firmware, see Chapter 6.

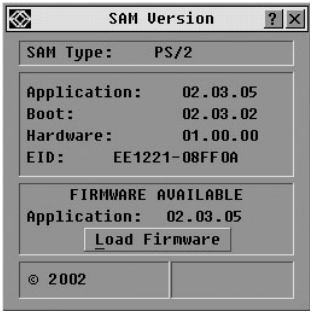


Figure 4-13. SAM Version Dialog Box

5. Click X to close the SAM Version dialog box.

4.6 Scanning Your System

In scan mode, the appliance automatically scans from port to port (server to server). You can scan up to 16 servers, specifying which servers to scan and the number of seconds that each server will display. The scanning order is determined by placement of the server in the list. The list is always shown in scanning order. You can, however, choose to display the server s name or EID number by pressing the appropriate button.

To add servers to the scan list:

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup - Scan*. The Scan dialog box appears.

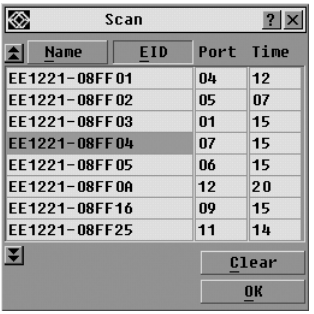


Figure 4-14. Scan Dialog Box

3. Determine the order within the list to add the server. If there are no servers in the scan list, your cursor will appear in a blank line at the top of the list.
 -or-
 To add a server to the end of the list, place your cursor in the last server entry and press the **Down Arrow** key.
 -or-
 To add a server in the midst of an existing list, place your cursor at the entry below where you want to insert a new server and press **Insert**.
4. Type the first few characters of a server name or port number to scan. The first matching server will appear in the line.
 -or-
 To move through the list, press the following keyboard commands in the Name, Port or Sec column to move through the list of servers available to scan.
 a. Press **Alt+Down Arrow** to move the cursor down through the list of servers.
 b. Press **Alt+Up Arrow** to move the cursor up through the list of servers.
 c. Press **Alt+Home** to move the cursor to the first server in the list.
 d. Press **Alt+End** to move the cursor to the last server in the list.

5. In the Sec column, type the number of seconds (from 3 to 255) of desired time before the scan moves to the next server in the sequence.
6. Move the cursor to the next line or press the **Down Arrow** and repeat steps 2-5 for each of the remaining servers to be included in the scan pattern.
7. Click *OK*.

To remove a server from the scan list:

1. In the Scan dialog box, click the server to be removed.
2. Press **Delete**.
 -or-
 Press **Shift+Delete** to remove the selected server and all entries below it.
3. Click *OK*.

To start the scan mode:

1. Press **Print Screen.** The Main dialog box will appear.
2. Click *Commands*. The Commands dialog box appears.

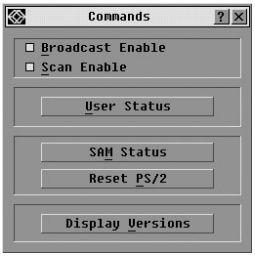


Figure 4-15. Commands Dialog Box

3. Select *Scan Enable* in the Commands dialog box.
4. Click *X* to close the Commands dialog box.

NOTE:
Scanning will commence when the Main dialog box or flag is displayed. Scanning is inhibited in any other OSD dialog box.

To cancel scan mode:

1. Select a server if the OSD is open.
 -or-
 Move the mouse or press any key on the keyboard if the OSD is not open. Scanning will stop at the currently selected server.
 -or-
 Press **Print Screen.** The Main dialog box will appear.

2. Click *Commands*. The Commands dialog box appears.

3. Clear *Scan Enable*.

4.7 Broadcasting to Servers

The analog user can simultaneously control more than one server in a system, to ensure that all selected servers receive identical input. You can choose to broadcast keystrokes and/or mouse movements independently.

NOTE:
You can broadcast to up to 16 servers at a time, one server per ARI port.

To access the Broadcast dialog box:

1. Press **Print Screen**. The Main dialog box will appear.

2. Click *Setup - Broadcast*. The Broadcast dialog box appears.



Figure 4-16. Broadcast Dialog Box

NOTES:

Broadcasting Keystrokes - The keyboard state must be identical for all servers receiving a broadcast to interpret keystrokes identically. Specifically, the keyboard **Caps Lock** and **Num Lock** modes must be the same for all servers. While the appliance attempts to send keystrokes to the selected servers simultaneously, some servers may inhibit and thereby delay the transmission.

Broadcasting Mouse Movements - For the mouse to work accurately, all systems must have identical mouse drivers, desktops (such as identically placed icons) and video resolutions. In addition, the mouse must be in exactly the same place on all screens. Because these conditions are extremely difficult to achieve, broadcasting mouse movements to multiple systems may have unpredictable results.

To broadcast to selected servers:

1. From the Broadcast dialog box, select the mouse and/or keyboard checkboxes for the servers that are to receive the broadcast commands.
 -or-
 Press the **Up** or **Down Arrow** keys to move the cursor to the target server. Then press **Alt+K** to select the keyboard checkbox and/or **Alt+M** to select the mouse checkbox. Repeat for additional servers.
2. Click *OK* to save the settings and return to the Setup dialog box. Click *X* or press **Escape** to return to the Main dialog box.
3. Click *Commands*. The Commands dialog box appears.
4. Click the *Broadcast Enable* checkbox to activate broadcasting. The Broadcast Enable Confirm/Deny dialog box appears.



Figure 4-17. Broadcast Enable Confirm/Deny Dialog Box

5. Click *OK* to enable the broadcast. Click *X* or press **Escape** to cancel and return to the Commands dialog box.
6. If broadcasting is enabled, type the information and/or perform the mouse movements you want to broadcast from the user station. Only servers in the list are accessible.

NOTE:
The other user is disabled when broadcast mode is enabled.

To turn broadcasting off:

From the Commands dialog box, clear the *Broadcast Enable* checkbox.

4.7 Changing Your Switch Mode

Your ServSelect II allows you to connect to attached servers using two methods: Preemptive and Cooperative.

Select *Preemptive* (default setting) to allow any user to select any server at any time; a request from another user disconnects the current user without warning.

-or-

Select *Cooperative* to maintain the current user connection; the current user won t be disconnected if another user requests connection.

If the Share Enable box is checked, users may share access to a single server. Only one may be in control at any given time.

To access the Switch dialog box:

1. Press **Print Screen**. The Main dialog box will appear.
2. Click *Setup - Switch*. The Switch dialog box appears.
3. Select either *Preemptive* or *Cooperative* as your switch mode.

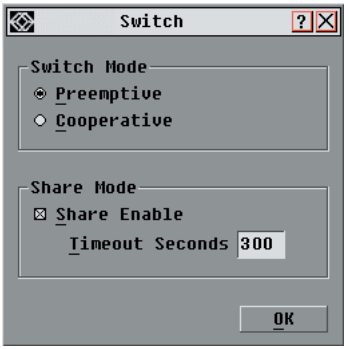


Figure 4-18. Switch Dialog Box

To enable sharing:

1. Click *Share Enable*. This allows two users to share a video connection.
2. Type the number of seconds for a sharing time-out (from 10 to 600) to designate the amount of time that another user has control of the connected port.

5. Troubleshooting

5.1 Calling BLACK BOX

If you determine that your ServSelect II is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact BLACK BOX Technical Support at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem;
- when the problem occurs;
- the components involved in the problem;
- any particular application that, when used, appears to create the problem or make it worse; and
- the results of any testing you ve already done.

5.2 Shipping and Packaging

If you need to transport or ship your ServSelect II:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the ServSelect for repair, make sure you include its power cord and the cables you re using with it. If you are returning the ServSelect IP, make sure you include everything you received with it. Before you ship, contact BLACK BOX to get a Return Authorization (RA) number.

6. FLASH Upgrades

6.1 Upgrading the ServSelect II

You can upgrade the firmware of your ServSelect II switch by using a special update utility provided by Black Box. This utility automatically configures the port communications settings to allow direct downloading from the connected server.

Items needed for the upgrade

- Server running Windows NT, Windows 95, Windows 98 or Windows 2000
- Available serial port (COM port) on the server
- Null modem serial cable (DB-male) that connects the switch and the server
- Firmware update

To upgrade firmware:

1. Connect the standard serial cable to a COM port on the server and to the serial connector on the back panel of the switch. Make a note of which COM port you have chosen, then turn on the switch.
2. Go to http://www.blackbox.com, and click on *Tech Support Services* and then on *Software Updates and Manuals* to access the firmware upgrade file. Once the download is complete, navigate to the drive where you have saved the firmware update and unzip the file.
3. Double-click to run the file WUpDateBBox.exe.
4. In the dialog box that displays, select the desired language and COM port.
5. Click *Load*.
6. Once the firmware is updated, the following message displays: *Download complete*. Click *Done* to exit the dialog box.
7. The switch automatically reboots after the upgrade is completed.

Possible error conditions

If the download does not execute properly, verify the following:

- Verify that the COM port is correct.
- Verify that no other program is currently using the COM port, or that a previous DOS window/shell is open that had used the desired COM port.
- Verify that no other copies of the WUpDate utility are currently running.
- Verify that a null modem serial cable is used.
- Verify in the selected COM port s Advanced Port settings that the FIFO buffers are selected and that the receive buffer is set to High.

CAUTION:
While upgrading, do not use your computer for anything else or switch between windows. Close all other windows if necessary. If the upgrade was unsuccessful (such as during a power outage), repeat the procedure.

6.2 Upgrading the SAM firmware

The SAMs can be upgraded individually or simultaneously.

To simultaneously upgrade multiple SAMs:

1. Press **Print Screen.** The Main dialog box will appear.
2. Click *Commands - SAM Status*. The SAM Status dialog box appears.

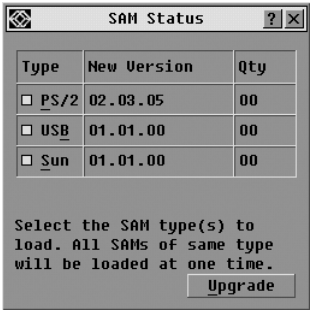


Figure 6-1. SAM Status Dialog Box

3. Click one or more types of modules to upgrade. Click *Upgrade*.
4. The SAM Upgrade dialog box appears. Click *OK* to initiate the upgrade and return to the SAM Status dialog box.



Figure 6-2. SAM Upgrade Dialog Box

To upgrade SAM firmware individually:

1. Press **Print Screen.** The Main dialog box will appear.
2. Click *Commands - Display Versions*. The Version dialog box appears.



Figure 6-3. Version Dialog Box

3. Click *SAM* to view individual cable version information. The SAM Selection dialog box appears.

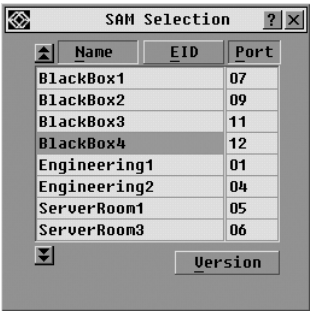


Figure 6-4. SAM Selection Dialog Box

4. Select an SAM to upgrade and click the *Version* button. The SAM Version dialog box appears.



Figure 6-5. SAM Version Dialog Box

5. Click the *Load Firmware* button. The SAM Load dialog box appears.



Figure 6-6. SAM Load Dialog Box

6. Click *OK* to initiate the upgrade and return to the Status dialog box.

NOTE:
During an upgrade, the SAM status indicator in the Main dialog box will be yellow. The SAM is unavailable while an upgrade is in progress. When an upgrade is initiated, any current connection to the server via the SAM will be terminated.



Doc. No. 590-330-001A

Customer Support Information:
For FREE Technical Support 24 hours a day, 7 days a week, call **724-746-5500** or fax **725-746-0745**
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World-Wide Web: **www.blackbox.com** • Email: **info@blackbox.com**
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